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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,195	02/26/2002	Li-Der Cheng	CHENG=47	4345
23364	7590	07/02/2004	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			LEFLORE, LAUREL E	
			ART UNIT	PAPER NUMBER
			2673	
DATE MAILED: 07/02/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/082,195	CHENG ET AL.	
	Examiner Laurel E LeFlore	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 May 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 11 May 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Specification

1. The amendment filed 11 May 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Lines 1-2 of paragraph [0004] disclose "A reflection board, which may also be referred to as an 'optics board' because it supports optical elements for detecting movement of the trace sphere". Also, line 5 of the abstract newly recites "optics board" in place of "reflection board", as recited in the abstract as originally filed. This function of the reflection board is not described in the specification as originally filed.

As stated in item 2 of Paper No. 3, "the function of the reflection board is unclear. The reflection board could be a component of the mouse's optical system, if the mouse were an optical mouse. Alternately, the reflection board could offer some reflection of the force or pressure exerted on the mouse when limit switch 31 is activated. However, the specification is not enabling as to the function of the reflection board, and it is unclear as to which, if either, of these is the correct function of the reflection board."

It is noted that applicant states in pages 9-10 of Paper No. 4, "the use of a board 28 supporting optical elements is well-known, and in fact is necessary to detect movement of the ball in the case of an optical mouse. The optics might include, for example, a light source and detector for the reflected light. Because such 'optics' boards are standard features of trackballs of the illustrated type, the change from

'reflection board' to 'optics board' should not represent 'new matter'." However, the specification as originally filed does not specify that the mouse is an optical mouse and such a feature, although it may be well-known, is not inherent, as other types of mice are also well-known. Thus, it is not inherent that the reflection board is an "optics board" and, alternately, the reflection board could offer some reflection of the force or pressure exerted on the mouse when limit switch 31 is activated, as stated in Paper No. 3.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong 5,565,891 in view of Pandolei 5,214,415.

4. In regard to claim 1, Armstrong discloses a mouse assembly comprising (see figure 2): a base (element 10) having an open top and a frame received in the open top of the base. Thus, a frame is disclosed. See column 6, lines 18-23, disclosing, "Lower and upper members 20, 22 in this example are rigidly connected to one another via vertically oriented rigid connecting posts 24." The frame having a protrusion which has a passage defined therethrough and a trace sphere is rotatably engaged with passage

of the frame. Further see column 6, lines 27-29, disclosing, "Upper member 22 includes an opening 26 in which trackball 12 resides and extends partly therethrough."

Armstrong further discloses a circuit board connected to an underside of the frame. See column 11, lines 37-42, disclosing the preference "that most all of the circuits, switches and sensors be mounted on carriage 14, and more particularly the lower member 20". Note the placement of switch 110 in figure 2, which is mounted underneath lower member 20. Thus, circuitry is connected to an underside of the frame. Also see column 11, lines 56-57, disclosing, "lower member 20 may be a printed circuit board". Further, the placement of circuitry on the upper or lower side of lower member 20 is simply a shift in the location of parts and is a matter of design choice (In re Japikse, 86 USPQ 70 (CCPA 1950)).

Armstrong further discloses electronic parts and a limit switch connected to an underside of the circuit board, the limit switch adapted to face a surface on which the base is put. See previous paragraph and note limit switch 110 in figure 2.

Armstrong further discloses that the frame is movable relative to the base. Note in figure 2 that the frame, including lower and upper member 20, 22 and connecting posts 24 are movable relative to base 10 upon foam rubber 30. Also see column 8, lines 54-62, disclosing, "Foam rubber 30 being compressible will allow the user to push down on trackball 12...to activate the down sensor 110. This pushing down compresses the foam rubber 30, and when the user releases the downward pressure, the foam rubber 30 being resilient pushes carriage 14 upward again to deactivate the down sensor 110".

Armstrong further discloses that the limit switch is adapted to face a surface on which the base is put. In further detail, note that the switch 110 of figure 2 faces the surface 108, which is directly abutting frame 10. In this way, the surface 108 is "a surface on which the base is put". Armstrong further discloses that the switch engages the surface 108 when the frame is moved relative to the base. This is depicted in figure 2. Note that the frame moves downward on foam rubber 30 towards surface 108 and base 10 when the switch is engaged.

Armstrong does not disclose that the mouse assembly comprises a flexible water-proof plate mounted to a top of the protrusion of the frame and having an aperture with which the trace sphere is engaged. However, Pandolei 5,214,415, discloses a cursor control assembly in which (see column 3, lines 17-23 and figures 2 and 3), "A pliable plastic seal 31 is also secured to the housing 10 around the periphery of the opening 11...The seal 31 is made of a pliable low-friction material such as Teflon or Rulon and excludes environmental contaminants such as water, sand and dirt from the housing interior".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions of Armstrong and Pandolei by adding a pliable plastic seal, as in the invention of Pandolei, to the invention of Armstrong. One would have been motivated to make such a change, thus having a flexible water-proof plate, based on the teaching of Pandolei to have such a seal in order to exclude environmental contaminants such as water, sand and dirt from the housing interior.

5. In regard to claim 3, Armstrong discloses a retaining collar received in the passage in the protrusion and a lower portion of the trace sphere being engaged with the collar. See figure 2, depicting such an arrangement of a retaining collar, element 16 in the passage in the protrusion with a lower portion of the trace sphere being engaged with the collar. Also see column 6, lines 64-65, disclosing "collet 16 retains trackball 12".

6. In regard to claim 4, see rejection of claim 1. Pandolei further discloses a protection plate engaged with the aperture of the flexible water-proof plate so as to retain an upper portion of the trace sphere. See figure 4 and column 2, lines 62-66, disclosing, "a ring-shaped conductive brush...is mechanically 7 secured to the base 16, surrounds the periphery of the opening 11, and electrically connects to the conductive coating 18 to the conductive ball 14." See figure 3, depicting this ring engaged with the aperture of the flexible water-proof plate. This ring serves as a protection plate, according to the immediate invention, in that (see paragraph [0011] of the specification of the immediate invention) it "is engaged with the aperture of the flexible water-proof plate 13 so as to retain an upper portion of the trace sphere 24 from being disengaged from the flexible water-proof plate 13". It is understood that the ring retains an upper portion of the sphere, since it is electrically connects to it and surrounds the periphery of the opening for the trace sphere.

7. In regard to claim 6, Armstrong discloses an invention similar to that which is claimed in claim 6. See rejection of claim 1 for similarities.

Armstrong further discloses springs extending between the leg and an under board to which the base is attached, the springs enabling movement of the frame relative to the base to activate the limit switch. See figure 2, element 30. Also see column 8, lines 54-62, disclosing, "Foam rubber 30 being compressible will allow the user to push down on trackball 12...to activate the down sensor 110. This pushing down compresses the foam rubber 30, and when the user releases the downward pressure, the foam rubber 30 being resilient pushes carriage 14 upward again to deactivate the down sensor 110". In this way, the foam rubber functions as springs and thus constitutes springs.

Armstrong does not disclose that the frame includes a leg shorter than a distance from the circuit board to the limit switch. However, the invention of Armstrong has a switch (see figure 2, element 110) that is activated by applying pressure to the legs (element 24), thus causing the compression of springs (foam rubber 30). The switch of Armstrong is further deactivated by the resilience of the springs when pressure to the legs is stopped. The disclosed criticality of the legs being shorter than the distance from the circuit board to the switch in the immediate invention is (see paragraph [0013] of the specification of the immediate invention) "so that when the trace sphere 24 is pressed by the users, the limit switch 31 touches the under board 15". As such an activation of the sensor 110 is accomplished in the invention of Armstrong, the length of the legs in comparison to the distance from the circuit board to the switch, as best understood, appears to simply be a change in proportion and thus a matter of design choice (In re Reese, 129 USPQ 402 (CCPA 1961)).

Response to Arguments

8. Applicant has amended the drawings and specification to overcome the objections to the drawings and specification of Paper No. 3. The previous objections to the drawings and specification is withdrawn.
9. Applicant's arguments, see pages 8-9 of Paper No. 4, section 3a, filed 11 May 2004, with respect to the 35 U.S.C 112, first paragraph rejection regarding the flexible plate of claim 1 have been fully considered and are persuasive. Further, claim 1 and the drawings have been amended to overcome the 35 U.S.C 112, first paragraph rejection regarding the reflection board and the limit switch. Thus, 35 U.S.C., first paragraph, rejection of claims 1-5 has been withdrawn.
10. Applicant's arguments filed 11 May 2004 have been fully considered but they are not persuasive.
11. Applicant's argues on page 11, first new paragraph, that "The Armstrong patent "fails to disclose or suggest the claimed frame legs and springs as recited in claim 6". However, as stated in Paper No. 3, item 9, Armstrong discloses that the frame has a plurality of legs. See figures 1 and 2, element 24. Armstrong further discloses an under board connected to an underside of the base. See the bottom side of element 10 in figure 2. This constitutes an underboard. Armstrong further discloses springs biased between the legs and the under board. See figure 2, element 30. Also see column 8, lines 54-62, disclosing, "Foam rubber 30 being compressible will allow the user to push down on trackball 12...to activate the down sensor 110. This pushing down compresses the foam rubber 30, and when the user releases the downward pressure,

the foam rubber 30 being resilient pushes carriage 14 upward again to deactivate the down sensor 110". In this way, the foam rubber functions as springs and thus constitutes springs.

Applicant's argues on page 11, second new paragraph, that "the seal 31 disclosed in the Pandolei patent is not in the form of a flexible *plate* mounted to the *top* of the sphere-supporting protrusion". However, note in figures 2 and 3, that the seal 31 is mounted to the top of the opening in the frame that supports the sphere, the opening including small protrusions in the frame beneath the seal 31. Also, note that the "pliable plastic" material of the seal. Pliability implies that the seal can be manipulated into any form, whether it be flat, as a plate, or angled upward, as depicted in figures 2 and 3. Further, the specific "plate" structure is of no disclosed criticality, except "enclosing the trace sphere so as to prevent liquid from entering the interior of the mouse assembly", which is accomplished by the seal 31 of Pandolei.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

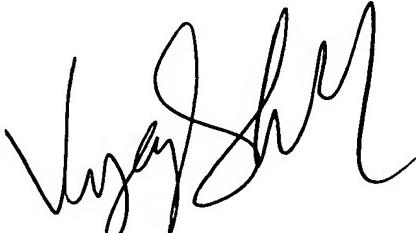
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TEL
LEL
29 June 2004



VIJAY SHANKAR
PRIMARY EXAMINER